

C-3 PERMANENT VEGETATION***PURPOSE & APPLICATIONS***

Permanent vegetative cover should be established on disturbed areas where permanent, long lived vegetative cover is needed to stabilize the soil, to reduce damages from sediment and runoff, and to enhance the environment.

CONSIDERATIONS

- Nutrients and pesticides used to establish and maintain vegetation must be minimized to protect surface and ground water quality.
- Water temperatures may be altered due to changes in shading reduction of natural and manmade channels and ponds.
- Provisions shall be made for surface and subsurface drainage, and for disposal of runoff without causing erosion. Facilities may include diversions, grade stabilization structures, streambanks stabilization or waterways.
- Refer to the First Killing Frost map located at the back of this section.

SPECIFICATIONS**Seedbed Preparation**

- Grade as feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.
- Apply limestone and fertilizer according to soil tests such as those offered by the University of Maine Soil Testing Laboratory. Soil sample mailers are available from the local Cooperative Extension Service Office. If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 800 pounds per acre or 18.4 pounds per 1,000 square feet using 10-20-20 (N-P2O5-K2O) or equivalent. Apply ground limestone (equivalent to 50% calcium plus magnesium oxide) at a rate of 3 tons per acre (138 lb. Per 1,000 sq. ft).
- Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, spring tooth harrow or other suitable equipment. The final harrowing operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.
- Remove from the surface all stones 2 inches or larger in any dimension. Remove all other debris, such as wire, cable, tree roots, concrete, clods, lumps or other unsuitable material.
- Inspect seedbed just before seeding. If traffic has left the soil compacted; the area must be tilled and firmed as above.

Seeding Dates

Spring seeding usually give the best results for all seed mixes or with legumes. Permanent seeding should be made 45 days prior to the first killing frost or as a dormant seeding with mulch after the first killing frost and before snowfall. When crown vetch is seeded in later summer, at least 35% of the seed should be hard seed (unscarified).

If seeding cannot be done within the seeding dates, mulch according to the TEMPORARY MULCHING BMP and OVERWINTER STABILIZATION AND CONSTRUCTION to protect the site and delay seeding until the next recommended seeding period.

- Select a seed mixture that is appropriate for the soil type and moisture content as found at the site, for the amount of sun exposure and for level of use. Select a mixture

recommended by the Maine Department of Transportation (MDOT), the USDA Soil Conservation Service or your local Soil and Water Conservation District. Recommendations for seed mixtures can be found in Appendix A.

- Inoculate all legume seed with the correct type and amount of inoculant.
- Apply seed uniformly by hand, cyclone seeder, drill, cultipacker type seeder or hydroseeder (slurry including seed and fertilizer). Normal seeding depth is from 1/4 to 1/2 inch. Hydroseeding with mulch may be left on soil surface.
- Where feasible, except where either a cultipacker type seeder or hydroseeder is used, the seedbed should be firmed following seeding operations with a roller, or light drag. Seeding operations should be on the contour.
- Apply mulch according to the TEMPORARY MULCHING BMP. All newly seeded areas will need mulching and mulch anchoring.

Hydroseeding

When hydroseeding (hydraulic application), a seedbed is prepared in the conventional way or by hand raking to loosen and smooth the soil and to remove surface stones larger than 6 inches in diameter. Slopes must be no steeper than 2 to 1 (2 feet horizontally to 1 foot vertically). Lime and fertilizer may be applied simultaneously with the seed. The use of fiber mulch on critical areas is not recommended (unless it is used to hold straw or hay). Better protection is gained by using straw mulch and holding it with adhesive materials or 500 pounds per acre of wood fiber mulch. Seeding rates must be increased 10% when hydroseeding.

Dormant Seeding

Seeding should not occur within 45 days of the first killing frost. During this period the seeds are likely to germinate but probably will not be able to survive the winter. The following methods may be used to perform a dormant seeding:

- When soil conditions permit, between the first killing frost and before snow fall, prepare the seedbed, lime and fertilize, apply the selected seed mixture, and mulch and anchor. Double the regular seeding rates for this type of seeding.
- Dormant seeds need to be anchored extremely well on slopes, but should not be used in ditch bases and areas of concentrated flows. Dormant seeding shall not be used in watersheds sensitive to water quality impacts (fisheries, phosphorus sensitive lakes and ponds, etc.). Instead, construction sites next to sensitive areas shall be stabilized with temporary or permanent seeding by September 15.
- Dormant seeding requires inspection in the spring. All areas where cover is inadequate must be immediately reseeded and mulched as soon as possible.

Sodding

Sodding is the stabilization of eroding areas by covering them with cut pieces of turf. It is an important emergency measure, which may be used between September 15th, and November 15th when new seeding cannot be guaranteed. Locations particularly suited to stabilization with sod are:

- Waterways carrying intermittent flow
- The areas around drop inlets in grassed swales
- Residential or commercial lawns where aesthetics is a factor

In swales and waterways where concentrated flow will occur, properly pegged sod is preferable to seed because there is no lag time between installation and the time when the channel is protected by vegetation. By framing the inlet with sod strips, drop inlets in grassed areas can be kept free of mulch, seed, and mud, and the grade immediately around the inlet can be maintained. It is initially more costly to install sod than to seed. But this cost is justified in places where sod can perform better than seed in controlling erosion. Ground preparation and proper maintenance are as important with sod as with seed.

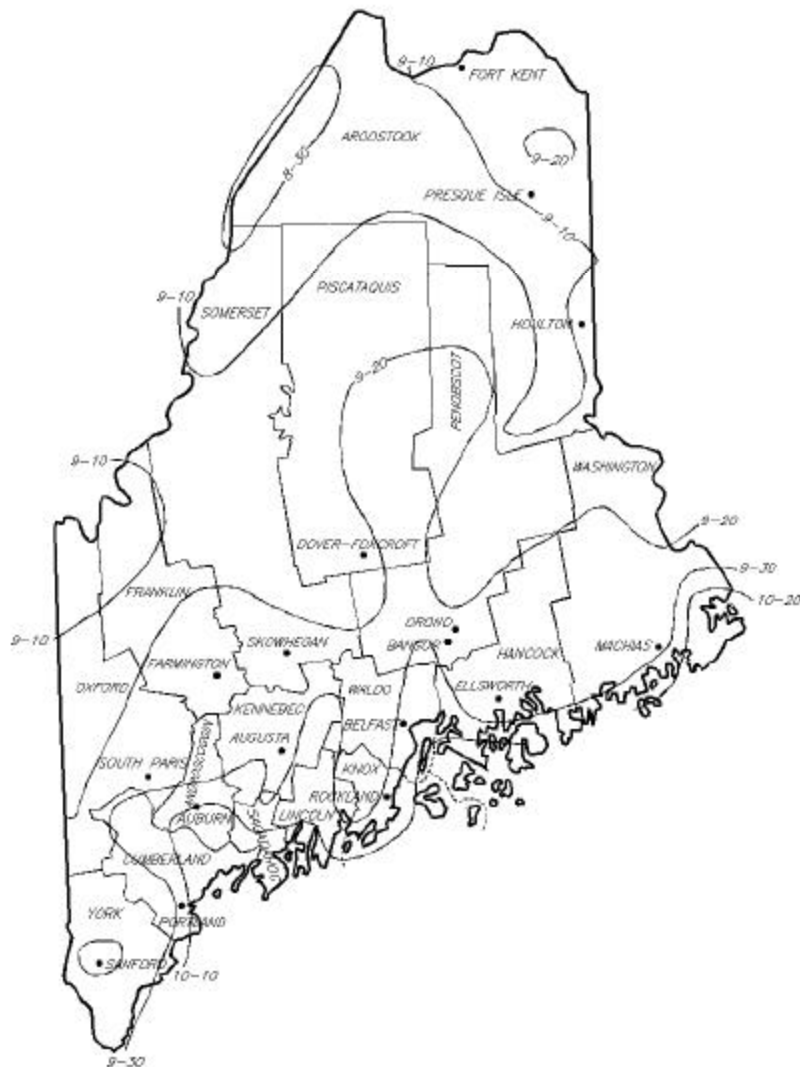
- Before laying sod, provide adequate drainage where internal water movement, especially at the toe of slopes, may cause seeps or soil slippage. And grade slopes 2:1 or flatter.
- Seedbed Preparation

- Provide the best possible soil conditions for sodding. The desirable soil textures include sandy loam, loam, and silt loam
- Fill areas must be compacted enough to prevent uneven settling. The entire surface to be sodded shall be free from large clods, stones, or other debris. The soil shall be loosened to a depth of 1 inch and thoroughly dampened, if not already moist and incorporate needed lime and fertilizer uniformly. Sod shall not be laid on dry soil.
- Lay strips of sod at right angles to direction of slope or flow of water starting at the lowest elevation. Wedge the edges and ends of the sod strips together and tamp or roll. Stagger joints. Make the top of the sod strips flush with the top of the undisturbed ground.
- Use wire staples, fine mesh wire or wood pins and binder twine on very steep slopes to hold sod in place until secured by plant growth.
- Irrigate sodded area immediately after installation.
- Establishment Dates: In Maine, sod can be established from April 1st to November 15th (may vary with region of state).
- In sodded Waterways, care shall be taken to prepare the soil adequately in accordance with this specification. The sod type shall consist of plant materials able to withstand the designed velocity (See VEGETATED WATERWAYS BMP).
- Sod strips in waterways shall be laid perpendicular to the direction of flow. Care should be taken to butt ends of strips tightly.
- After rolling or tamping, sod shall be pegged or stapled to resist washout during establishment. Chicken wire, jute or other netting may be pegged over the sod for extra protection.
- When sod is installed to stabilize areas of concentrated flow (inlets, diversions, ditches, etc.), installation must be completed before runoff is directed to that area.
- After the first week, sod shall be watered as necessary to maintain moisture in the root zone and prevent dormancy of sod.
- No more than 1/3 of the shoot (grass leaf) should be removed by mowing. Grass height should be maintained between 2 and 3 inches unless otherwise specified.

MAINTENANCE

- Lime according to a soil test or at a minimum of every five years using a rate of 2 tons per acre (100 pounds per 1,000 sq. ft).
- Fertilize grasses according to a soil test or broadcast biennially, 300 pounds of 10-10-10 or equivalent per acre (7.5 pounds per 1,000 sq. ft).
- Fertilize legumes according to a soil test or broadcast every three years 300 pounds of 0-20-20 or equivalent per acre (7.5 pounds per 1,000 sq. ft).

FIRST KILLING FROST DATES FOR MAINE (UNIVERSITY OF MAINE)
32 DEGREE AVERAGE DATE OF FIRST FREEZE IN FALL



32° AVERAGE DATE OF FIRST FREEZE IN FALL (BASED ON
DATA FROM 1931-1968)

SOURCE: MAINE AGRIC. EXP. STA.,
BULLETIN 679 "FREEZE IN MAINE"
G.R. COOPER, PROF. OF BOTANY, UNIVERSITY OF MAINE
R.E. LAUTZENHEISER, CLIMATOLOGIST FOR NEW ENGLAND

FIRST KILLING
FROST DATES